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REMARKSStatus Summary

In this amendment, no claims are canceled and claims 89-94 are added. Therefore, upon entry of this amendment, claims 1-10, 48-57, and 79-94 will be pending.

Claim Rejections 35 U.S.C. § 112

Claims 83-86 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 83 and 86 have been amended as requested by the Examiner. Accordingly, it is respectfully submitted that the rejection of claims 83-86 should now be withdrawn.

Claim Rejections 35 U.S.C. § 103

Claims 1-3, 5-10, 48-50, 52-57, and 79-88 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,923,659 to Curry (hereinafter, "Curry") in view of U.S. Patent No. 6,314,290 to Joshi et al. (hereinafter, "Joshi"). This rejection is respectfully traversed.

On page 7 of the Official Action, claims 83-88 were indicated as allowable if rewritten to overcome the rejections under 35 U.S.C. § 112, second paragraph. However, on page 3 of the Official Action, claims 83-88 were rejected as unpatentable over Curry in view of Joshi. In a telephone conference with the Patent Examiner on June 28, 2005, the Examiner indicated that the rejection of claims 83-88 as unpatentable over Curry in view of Joshi was in error. Accordingly, the remarks below

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address the rejection of claims 1-3, 5-10, 48-50, 52-57, and 79-82 as unpatentable over Curry in view of Joshi.

Independent claims 1 and 48 recite a method and an SS7 user part message communicator for encapsulating received SS7 user part messages in Internet protocol (IP) packets at a signal transfer point configured to perform SS7 message transfer part layer 3 routing and global title translation.

Performing global title translation is a processor intensive operation at an STP. Not every STP performs global title translation. For example, Applicants have attached an excerpt from Russell, Travis, Signaling System No. 7, 3rd Edition (2000), that indicates as follows:

Not every STP in the network needs to have this capability. In fact, global title translation is usually a function that is centralized within the network. The global title digits are given to the SCCP function of global title translation, so that SCCP routing can determine the point code and subsystem number that needs to be routed for the message. (See Russell, Travis p. 255.)

Thus, from the above-quoted passage, global title translation involves an SCCP routing procedure that translates global title digits into a destination point code and subsystem number. The passage also indicates that all STPs do not perform global title translation and such translation is usually performed at a centralized STP in the network. Independent claims 1 and 48 recite a method and an SS7 user part message communicator that encapsulate SS7 user part messages and IP datagrams, perform MTP routing, and perform global title translation.

There is absolutely no teaching or suggestion in Curry of an STP that encapsulates an SS7 user part message in an IP datagram, performs MTP level 3

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routing, and global title translation. Figure 9 in column 17 and 18 of Curry illustrate the structure of the STP in Curry. In Figure 9, the structure includes interface modules 81, packet switch fabric 83, administrative interface module 85, and a user interface 95. Nothing about these structures indicates that the STP includes global title translation functionality. For example, there are no SCCP routing or global title translation functions mentioned with regard to the STP of Curry. The only function performed by the STP illustrated in Figure 9 of Curry is message routing. For example, Curry states:

The packet switch fabric provides the actual routing of packets coming in from one link through one of the interface modules 83 and back out through one of the interface modules 81 to another data link. (See column 18, lines 9-12 of Curry.)

Thus, from this passage, Curry discloses a reduced functionality STP that does not include global title translation capabilities. Accordingly, since Curry fails to teach that the STP performs global title translation and only centralized STPs perform such translation, it is respectfully submitted that it would not have been obvious to modify the STP of Curry to perform global title translation.

On page 3 at lines 5-8, the Official Action states:

When the STP recognizes that a foreign prefix exists, it directs the packet, according to the translation table within the STP (a first STP configured to perform global title translation). (See column 15, lines 47-67; column 21, lines 19-21, to Internet module.)

From this passage, the Official Action indicates that column 15, lines 47-67 and column 21, lines 19-21 of Curry teach or suggest an STP that performs global title translation and that these passages, combined with Internet module 130 of Curry and the MTP

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level 3 routing of Joshi render obvious the claimed invention. Applicants respectfully disagree. Column 15, lines 47-67 of Curry states as follows:

In the example shown in FIG. 6, the three octets of the called party address contain an actual destination point code (DPC) identified as DPC-member, DPC-cluster and DPC-network ID information. In operation, the translation tables stored in the STP cause the STP to actually route based on the DPC without translating any of the DPC octets into new values. The called party address octets (6-8), however, may carry other types of called party addressing information and receive different treatment by the STP. For example, these octets may carry a global title (GTT) and subsystem number (SSN) information.

To distinguish the types of information carried in octets 6-8, the MSU type service information octet (5) contains an address indicator. For example, a '1' value in the first bit position in this octet signifies that the called party address octets contain a subsystem number, a '1' value in the second bit position in this octet signifies that the called party address octets contain a signaling point code. The third, fourth, fifth and sixth bits of the address indicator serve as the global title indicator and are encoded to identify the presence and type of global title value in octets 6-8.

The above-quoted passage from Curry refers to Figure 6, which illustrates the structure of an SS7 message. The passage indicates that the called party address octets in the message may carry a global title translation and a subsystem number and that these octets may receive different treatment by an STP. However, nothing about this passage teaches an STP that performs global title translation, MTP level 3 routing, and encapsulation of an SS7 user part message in an IP datagram as claimed. The passage merely discusses in general the SS7 protocol and indicates that global title information may receive different treatment by an STP.

Column 21, lines 20-22 of Curry state as follows:

The STP analyzes the point code information in the packet and routes the packet according to the translation table stored within the STP.

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The above-quoted passage from Curry indicates that the STP analyzes point code information and routes the packet according to the translation table stored in the STP. Routing based on point codes is the exact opposite of global title translation. (Emphasis added.) As stated in the above-quoted passage from Signaling System No. 7 by Travis Russell and in Curry, global title translation is an alternative to point code routing. The translation table referred to in column 21 of Curry routes based on point codes, which are MTP level information, rather than global title information, which is SCCP level information. Thus, it is respectfully submitted that Curry fails to teach or suggest a method or an SS7/IP user part message communicator that performs MTP level 3 routing, global title translation, and encapsulation of an SS7 user part message in an IP datagram as claimed.

Joshi likewise lacks such teaching or suggestion. As a preliminary matter, Applicants note that the portion of Joshi, (Figure 4 and column 6, lines 49-65 of Joshi) relied upon on page 3 of the Official Action is not prior art to independent claims 1 or 48. Independent claims 1 and 48 recite a method and an SS7/IP user part message communicator that encapsulate user part messages and IP datagrams and route the messages over an IP network, where the steps are performed at an STP that performs MTP level 3 routing and global title translation. The present application claims the priority benefit of U.S. patent application no. 09/205,809 filed December 4, 1998 (now U.S. Patent No. 6,324,183) (hereinafter, "Parent Application"). Claims 1 and 48 are entitled to the priority benefit of the Parent Application because all of the steps in these claims are supported by the Parent Application. For example, the Parent Application states:

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Although the invention has been described in detail with respect to replacing A links between an STP and an SCP by TCP/IP, other SS7 links may also be replaced by TCP/IP links. For example, implementation of ISUP (call setup/teardown) functionality via intermediate IP network transport of ISUP data may be performed. SS7 formatted ISUP data can be translated into TCP/IP format and sent to a first STP, routed through the associated IP network retranslated back into SS7 format by a second STP. Thus, the B links between the STPs may also be replaced by TCP/IP links. Other links may also be replaced. (See column 13, lines 35-46 of U.S. Patent No. 6,324,183.)

The above-quoted passage indicates that the Parent Application supports encapsulation of ISUP messages in an IP datagram at an STP.

With regard to the claim limitations that require that the STP perform MTP level 3 routing and global title translation, the Parent application states:

Accordingly, TSM 2010 of Figure 21 includes an HMRT 1915c that determines the signaling link over which MSU data is to be sent. An SCCP routing control (SCRC) 2020 performs global title translation using a global title translation database 2022 and a map database 2024. (See column 12, lines 21-25 of U.S. Patent No. 6,324,183.)

Thus, the above-quoted passage indicates that HMRT 1950c performs SS7 MTP level 3 routing and that TSM 2010 of the STP in Figure 21 performs global title translation, these features of independent claims 1 and 48 are also supported by the Parent Application. Based on the foregoing, it is respectfully submitted that independent claims 1 and 48 have a priority benefit of December 3, 1998.

Claims 6-10 and 53-57, which relate to replacing various kinds of conventional SS7 links with an IP link are likewise supported by the Parent Application. For example, the above-quoted passage from column 13 of U.S. Patent No. 6,324,183 indicates that various types of SS7 links can be replaced by TCP/IP links. Claims 2 and 49, which relate to encapsulating SS7 user part messages in TCP/IP packets, are also supported

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by the above-referenced passage from column 13 of U.S. Patent No. 6,324,183. Claims 3 and 50, which relate to encapsulating user part messages and user datagram protocol packets, are likewise supported by the Parent Application. (See column 6, lines 63-65 of U.S. Patent No. 6,324,183.)

The portion of Joshi relied upon by the Examiner (Figure 4 and column 6, lines 49-65) has a priority benefit of February 2, 1999. February 2, 1999 is the filing date of Joshi. Joshi claims the benefit of U.S. patent application no. 09/115,098 filed July 13, 1998 and U.S. provisional patent application no. 60/110,053 filed November 30, 1998. U.S. patent application no. 09/115,098 claims the priority benefit of U.S. provisional patent application no. 60/052,443 filed July 14, 1997. Applicants have reviewed all of the priority documents of Joshi, and none of the priority documents contain Figure 4 or the corresponding text relied upon from column 6 of Joshi. Copies of the priority documents of Joshi are not enclosed herewith because they can be accessed via the Image File Wrapper system available via the U.S. Patent and Trademark Office website. However, copies can be provided at the Examiner's request. Accordingly, it is respectfully submitted that the portion of Joshi relied upon by the Examiner has an effective filing date of February 11, 1999. Since claims 1-3, 6-10, 48-50, and 53-57 are entitled to a priority filing date of December 3, 1998, it is respectfully requested that the rejection of these claims as unpatentable over Curry in view of Joshi should be withdrawn for this reason alone.

Moreover, even assuming for the sake of argument that the portion of Joshi relied upon by the Examiner is prior art to the claims, a person of ordinary skill in the art would not have been motivated to combine MSC (STP) in Figure 4 of Joshi with the

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STP and the Internet module of Curry because this would further increase the processing burden on the node. The Examiner's combination requires that mobile switching center (MSC) functions, global title translation, MTP level 3 routing, and encapsulating SS7 user part messages in an IP datagram be performed at the same STP node. Because of the increased processing burden that this combination would produce, it would not have been obvious to a person of ordinary skill in the art in light of Curry and Joshi to implement encapsulation of SS7 user part messages in IP datagrams, MTP level 3 routing, and global title translation in an STP as claimed. Accordingly, for this additional reason, the rejection of claims 1, 48 and their respective dependent claims as unpatentable over Curry in view of Joshi should be withdrawn.

Yet another reason that it would not have been obvious to combine MSC (STP) in Figure 4 of Joshi with the STP and the Internet Module of Curry to yield the invention as claimed is that Joshi nowhere teaches that the MSC (STP) in Figure 4 processes any user part messages. In Figure 4 of Joshi, the MSC (STP) routes messages between the TCS (SSP) and the HLR (SCP). The types of messages routed are MAP messages and TCAP messages. (See Figure 4 of Joshi.) There is absolutely no teaching or suggestion of receiving or encapsulating user part messages as claimed. Accordingly, for this additional reason, the rejection of the claims as unpatentable over Curry in view of Joshi should be withdrawn.

Claims 8 and 55 were rejected under 35 U.S.C. § 103(a) as unpatentable over Curry in view of admitted prior art (Figures 1-7). This rejection is respectfully traversed.

As a preliminary matter, Applicants note that claim 8 depends from claim 1 and claim 55 depends from claim 48. On page 3, the Official Action admits that Curry does

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not expressly disclose configuring to perform SS7 message transfer part layer 3 routing as a signal transfer point. Nonetheless, page 6 of the Official Action indicates that Curry discloses "all of the claim limitations as stated above." (See paragraph 13 on page 6 of the Official Action.) Thus, it is respectfully submitted that since the Official Action admits that Curry does not disclose all of the elements of independent claims 1 and 48, Curry cannot disclose all of the claim limitations in dependent claims 8 and 55, and the rejection should be withdrawn for this reason alone.

Moreover, the combination of Curry, Figures 1-7 of the present application, and Schrodi (which was used in combination with Curry to reject the corresponding independent claims) fails to teach a method or an SS7/IP user part message communicator that performs global title translation, MTP level 3 routing, and encapsulation of an SS7 user part message in an IP datagram at an STP as claimed. As stated above, Curry and Schrodi fail to teach or suggest the invention claimed in Independent claims 1 and 48. Figures 1-7 of the present application likewise lack such teaching or suggestion. Figures 1-7 of the present application disclose TDM-based SS7 A-E links that connect SS7 signaling points. Absolutely nothing about these figures or the corresponding description teaches that these TDM-based links can be replaced by IP signaling links as claimed. Accordingly, for this additional reason, the rejection of these claims as unpatentable over Curry in view of Figures 1-7 of the present application should be withdrawn.

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Allowable Subject Matter

Claims 83-88 were indicated as allowable if rewritten or amended to overcome the rejections under 35 U.S.C. § 112, second paragraph. Claims 83 and 86 have been amended as requested by the Examiner. Accordingly, it is respectfully submitted that claims 83-88 should now be allowed.

Examiner's Response to Applicants' Arguments

On page 7 of the Official Action, the Examiner indicated that Applicants' arguments with regard to claims 1-10, 48-57, and 79-88 have been considered but are moot in view of the new grounds for rejection. Applicants respectfully submit that the Official Action fails to address any of Applicants' detailed evidence of commercial success of the claimed invention submitted in Applicants' response dated August 17, 2004. In particular, Applicants presented evidence of commercial success of an SS7 IP gateway product that embodies the claimed invention. Applicants also presented evidence of a nexus between the merits of the claimed invention and the commercial success. Since commercial success is an applicable secondary consideration with regard to any rejection of the claims as obvious under 35 U.S.C. § 103, Applicants respectfully submit that this evidence applies equally to the rejection of the claims as unpatentable over any combination of Curry, Schrodi, Figures 1-7 of the present application, and any of the references cited in the Official Action. Accordingly, in light of the commercial success of the claimed invention, for this additional reason, Applicants respectfully submit that the rejections of all the claims under 35 U.S.C. § 103 should be withdrawn.

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New Claims

New dependent claims 89-94 are added. Support for these claims is found, for example on page 22, line 10 through page 23, line 4 of the present specification. These claims are patentable over all the references cited in the Official Action for the same reasons stated above with regard to the corresponding independent claims and for the additional elements recited therein.

Request for Examiner Interview

Applicants hereby request an in-person Examiner Interview when the Examiner receives and begins consideration of this response. In order to schedule such an Interview, the Examiner is requested to contact Applicants' representative, Gregory A. Hunt at (919) 493-8000.

CONCLUSION

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

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The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON & TAYLOR, P.A.

Date: June 29, 2005By: Gregory A. Hunt
Registration No. 41,085

Customer No.: 25297

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Enclosures:

Russell, Travis, Signaling System No. 7, 3rd Edition, pp. 255-256 (2000)